Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): An arrangement for detecting a short-circuit condition at at least one of a pair of write head terminals of a write driver, the write driver producing a write current that, when passed through a inductive head assembly coupled to the pair of write head terminals, polarizes the inductive head according to a direction of the write current, the arrangement comprising:

a first current mirror that produces a first current that is proportional to at least a portion of the write current that flows in a first direction into a first write head terminal of the write driver;

a second current mirror that produces a second current that is proportional to at least a portion of the write current that flows in a second direction, opposite the first direction, into a second write head terminal of the write driver; and

a short-circuit detection device responsive to the first and second currents;

wherein the short-circuit detection device detects a short-circuit condition at at least one of the first and second write head terminals when an average value of the first current is different from an average value of the second current by a predetermined amount.

Claim 2 (original): The arrangement according to claim 1, wherein the first and second current mirrors each comprise two or more individual current mirrors which together mirror the respective at least portions of the write current two or more times in producing the respective first and second currents.

Claim 3 (original): The arrangement according to claim 1, further comprising:

a first capacitor having a first terminal coupled to an output of the first current mirror and a first input terminal of the short-circuit detection device, the first capacitor having a second terminal coupled to an AC ground terminal; and

a second capacitor having a first terminal coupled to an output of the second current mirror and a second input terminal of the short-circuit detection device, the first capacitor having a second terminal coupled to an AC ground terminal;

wherein the first and second capacitors convert the respective first and second currents into corresponding first and second average voltages that are used by the short-circuit detection device to detect a difference in the average value of the first and second currents.

Claim 4 (original): The arrangement of claim 3, further comprising:

a first resistor having a first terminal coupled to the output of the first current mirror, the first terminal of the first capacitor, and the first input terminal of the short-circuit detection device, the first resistor having a second terminal coupled to an AC ground terminal; and

a second resistor having a first terminal coupled to the output of the second current mirror, the first terminal of the second capacitor, and the second input terminal of the short-circuit detection device, the second resistor having a second terminal coupled to an AC ground terminal;

wherein the first and second resistors, together with the first and second capacitors, filter out noise present in the respective first and second currents, and wherein the resistors provide respective bias values for the first and second average voltages used by the short-circuit detection device.

Claim 5 (original): The arrangement of claim 3, wherein the short-circuit detection device is a differential comparator having an extended linear region that produces a short-to-ground fault signal at an output terminal of the comparator when the difference of the first and second average voltages presented at the input terminals of the comparator exceed the predetermined threshold.

Claim 6 (original): The arrangement of claim 1, wherein the at least portions of the write current flowing into the write head terminals in the first and second directions correspond to respective boost currents that each comprise a portion of the overall write current flowing in a given direction for a part of a period needed to polarize the inductive head.

Claim 7 (original): The arrangement of claim 6, wherein the magnitude of each of the boost currents is independent of the magnitude of a remaining portion of the overall write current flowing in a given direction for the period needed to polarize the inductive head.

Claim 8 (currently amended): An arrangement for detecting an open-circuit condition at at least one of a pair of write head terminals of a write driver, the write driver producing a write current that, when passed in at least one of two directions through [[a]] an inductive head assembly coupled to the pair of write head terminals, polarizes the inductive head according to [[a]] the at least one direction of the write current, the arrangement comprising:

a current mirror that produces a mirrored write current that is proportional to the write current that is passed through the inductive head assembly in the two directions ~~under normal operating conditions~~; and

an open-circuit detection device responsive to the mirrored write current;

wherein the open-circuit detection device detects an open-circuit condition at at least one of the first and second write head terminals when the magnitude of the ~~mirrored~~ write current drops below a predetermined value.

Claim 9 (currently amended): The arrangement of claim 8, further comprising:

a resistor having a first terminal coupled to an output of the current mirror and a first input terminal of the open-circuit detection device, the first resistor having a second terminal coupled to a reference voltage;

wherein the resistor converts the mirrored write current into a voltage that is used by the open-circuit detection device to detect when the magnitude of the ~~mirrored~~ write current drops below the predetermined value.

Claim 10 (original): The arrangement of claim 9, wherein the open-circuit detection device is a comparator having an extended linear region that produces an open-circuit fault signal at an output terminal of the comparator when voltage presented at the first input terminal of the comparator exceeds a reference voltage

presented at a second input terminal of the comparator by a predetermined threshold.

Claim 11 (original): The arrangement of claim 10, wherein the reference voltage presented at the second input terminal of the comparator is inversely proportional to the write current that is passed through the inductive head assembly under normal operating conditions.

Claim 12 (currently amended): A voltage-mode write driver, comprising:

circuitry to produce a write current that, when passed through a inductive head assembly coupled to the write driver through a pair of write head terminals, polarizes the inductive head according to a direction of the write current;

circuitry to detect a short-circuit condition at at least one of the write head terminals, including

a first current mirror that produces a first current that is proportional to at least a portion of the write current that flows in a first direction into a first write head terminal of the write driver;

a second current mirror that produces a second current that is proportional to at least a portion of the write current that flows in a second direction, opposite the first direction, into a second write head terminal of the write driver; and

a short-circuit detection device responsive to the first and second currents; and

circuitry to detect an open-circuit condition at at least one of the write head terminals, including

a third current mirror that produces a third current that is proportional to the write current that is passed through the inductive head assembly in the first and second directions ~~under normal operating conditions~~; and

an open-circuit detection device responsive to the third current;

wherein the short-circuit detection device detects a short-circuit condition at at least one of the write head terminals when an average value of the first current is different from an average value of the second current by a first predetermined amount, and the open-circuit detection device detects an open-circuit condition at at

least one of the write head terminals when the magnitude of the ~~third~~ write current drops below a second predetermined value.

Claim 13 (original): The voltage-mode write driver according to claim 12, wherein the first and second current mirrors each comprise two or more individual current mirrors which together mirror the respective at least portions of the write current two or more times in producing the respective first and second currents.

Claim 14 (original): The voltage-mode write driver according to claim 12, wherein the circuitry to detect a short-circuit condition further includes:

a first capacitor having a first terminal coupled to an output of the first current mirror and a first input terminal of the short-circuit detection device, the first capacitor having a second terminal coupled to an AC ground terminal; and

a second capacitor having a first terminal coupled to an output of the second current mirror and a second input terminal of the short-circuit detection device, the first capacitor having a second terminal coupled to an AC ground terminal;

wherein the first and second capacitors convert the respective first and second currents into corresponding first and second average voltages that are used by the short-circuit detection device to detect a difference in the average value of the first and second currents.

Claim 15 (original): The voltage-mode write driver according to claim 14, wherein the circuitry to detect a short-circuit condition further includes:

a first resistor having a first terminal coupled to the output of the first current mirror, the first terminal of the first capacitor, and the first input terminal of the short-circuit detection device, the first resistor having a second terminal coupled to an AC ground terminal; and

a second resistor having a first terminal coupled to the output of the second current mirror, the first terminal of the second capacitor, and the second input terminal of the short-circuit detection device, the second resistor having a second terminal coupled to an AC ground terminal;

wherein the first and second resistors, together with the first and second capacitors, filter out noise present in the respective first and second currents, and

wherein the resistors provide respective bias values for the first and second average voltages used by the short-circuit detection device.

Claim 16 (original): The voltage-mode write driver of claim 14, wherein the short-circuit detection device is a differential comparator having an extended linear region that produces a short-to-ground fault signal at an output terminal of the comparator when the difference of the first and second average voltages presented at the input terminals of the comparator exceed the first predetermined threshold.

Claim 17 (original): The voltage-mode write driver of claim 12, wherein the at least portions of the write current flowing into the write head terminals in the first and second directions correspond to respective boost currents that each comprise a portion of the overall write current flowing in a given direction for a part of a period needed to polarize the inductive head.

Claim 18 (original): The voltage-mode write driver of claim 17, wherein the magnitude of each of the boost currents is independent of the magnitude of a remaining portion of the overall write current flowing in a given direction for the period needed to polarize the inductive head.

Claim 19 (currently amended): The voltage-mode write driver of claim 12, wherein the circuitry to detect an open-circuit condition further includes:

a resistor having a first terminal coupled to an output of the third current mirror and a first input terminal of the open-circuit detection device, the first resistor having a second terminal coupled to a reference voltage;

wherein the resistor converts the third current into a voltage that is used by the open-circuit detection device to detect when the magnitude of the ~~third~~ write current drops below the second predetermined value.

Claim 20 (original): The arrangement of claim 19, wherein the open-circuit detection device is a comparator having an extended linear region that produces an open-circuit fault signal at an output terminal of the comparator when voltage presented at the first input terminal of the comparator exceeds a reference voltage

presented at a second input terminal of the comparator by a predetermined threshold.

Claim 21 (original): The arrangement of claim 20, wherein the reference voltage presented at the second input terminal of the comparator is inversely proportional to the write current that is passed through the inductive head assembly under normal operating conditions.

Claim 22 (original): A method for detecting a short-circuit condition at at least one of a pair of write head terminals of a write driver, the write driver producing a write current that, when passed through a inductive head assembly coupled to the pair of write head terminals, polarizes the inductive head according to a direction of the write current, the method comprising the steps of:

generating a first current that is proportional to at least a portion of the write current that flows in a first direction into a first write head terminal of the write driver;

generating a second current that is proportional to at least a portion of the write current that flows in a second direction, opposite the first direction, into a second write head terminal of the write driver; and

detecting a short-circuit condition at at least one of the first and second write head terminals when an average value of the first current is different from an average value of the second current by a predetermined amount.

Claim 23 (currently amended): A method for detecting an open-circuit condition at at least one of a pair of write head terminals of a write driver, the write driver producing a write current that, when passed <u>in at least one of two directions</u> through [[a]] <u>an</u> inductive head assembly coupled to the pair of write head terminals, polarizes the inductive head according to [[a]] <u>the at least one</u> direction of the write current, the method comprising the steps of:

generating a mirrored write current that is proportional to the write current that is passed through the inductive head assembly <u>in the two directions</u> ~~under normal operating conditions~~; and

detecting an open-circuit condition at at least one of the first and second write head terminals when the magnitude of the ~~mirrored~~ write current drops below a predetermined value.